Undirected Endo-Cayley Digraphs of Cyclic Groups of Order Primes

Authors : Chanon Promsakon, Sayan Panma

Abstract : Let S be a finite semigroup, A a subset of S and f an endomorphism on S. The endo-Cayley digraph of a semigroup S corresponding to a connecting set A and an endomorphism f, denoted by endo − Cayf (S, A) is a digraph whose vertex set is S and a vertex u is adjacent to a vertex v if and only if v = f(u)a for some a ∈ A. A digraph D is called undirected if any edge uv in D, there exists an edge vu in D. We consider the undirectedness of an endo-Cayley of a cyclic group of order prime, Zp. In this work, we investigate conditions for connecting sets and endomorphisms to make endo-Cayley digraphs of cyclic groups of order primes be undirected. Moreover, we give some conditions for an undirected endo-Cayley of cycle group of any order.

Keywords : endo-Cayley graph, undirected digraphs, cyclic groups, endomorphism